Provider Notification: New OPA for TACO Risk

TO: All Ordering Providers (Inpatient and Outpatient)

FROM: Transfusion Committee

RE: New OPA — Patients at Risk for Transfusion-Associated Circulatory Overload (TACO)

EFFECTIVE DATE: 8/11/26

Background on TACO

Transfusion-associated circulatory overload (TACO) is the leading cause of transfusion-related morbidity and mortality in the US. It results from hydrostatic (cardiogenic) pulmonary edema and typically presents as acute respiratory distress, hypertension, widened pulse pressure, tachycardia, and a positive fluid balance occurring during or within 6–12 hours of transfusion. TACO is thought to follow a "two-hit" model: an underlying patient vulnerability to volume (e.g., cardiac or renal impairment, pre-existing fluid overload) is the first hit, and the transfusion itself is the second—notably, up to half of cases occur after transfusion of a single unit, so TACO is not

exclusively a large-volume phenomenon. It remains under-recognized, with an estimated incidence near 1% of transfused patients (and higher in ICU populations), and is associated with increased mechanical ventilation, longer length of stay, and higher mortality. Because many at-risk patients can be identified before transfusion, TACO is considered largely preventable through recognition of susceptible patients, slower administration rates, single-unit ordering, and judicious peri-transfusion diuretic use

What is changing

A new OPA has been built into the EHR to flag patients at elevated risk for TACO at the time blood product TRANSFUSE orders are signed. This clinical decision support tool is intended to prompt consideration of mitigation strategies before the transfusion begins.

When the alert fires

The OPA applies to all patients over 18 years of age and fires when a "Transfuse" order is being signed in both inpatient and outpatient settings. The operating room (OR) is excluded.

The alert triggers (using "OR" logic — any one criterion) when a patient over 18 has one or more of the following. For technical reasons, the pop up does not display the exact trigger(s) that fired the alert. There is a lockout period of 24 hours to avoid multiple hits for the same patient for the same product. The lockout is currently set per user.

- **Problem list diagnoses**

Problem list	Diagnoses
1	PULMONARY HYPERTENSION
2	MALIGNANT HYPERTENSION
3	TACO
4	ACUTE RESPIRATORY DISTRESS SYNDROME
5	SEVERE AORTIC VALVE STENOSIS
6	HEART FAILURE
7	CONGESTIVE HEART FAILURE
8	PULMONARY EDEMA
9	CARDIOMYOPATHY
10	ACUTE CORONARY SYNDROME
11	HEART VALVE DISORDER
12	ATRIAL FIBRILLATION
13	HEART BLOCK
14	MALIGNANT HYPERTENSION
15	HYPERTENSIVE CRISIS

16	TRANSPLANTED HEART PRESENT
17	RESPIRATORY FAILURE
18	RENAL FAILURE SYNDROME
19	HEPATIC FAILURE
20	MULTIPLE ORGAN FAILURE
21	SEPSIS
22	CORONARY ARTERIOSCLEROSIS

- **Most recent lab values or vital signs:**
  - BNP > 250
  - NT-proBNP > 1000
  - Troponin above 0.05
  - eGFR < 45
  - Positive fluid balance > 2 liters over the preceding 24 hours
- **Order-based trigger:**
  - More than 2 blood products ordered (and signed to be transfused) at the same time

Provider responsibilities

- The OPA is directed to the **ordering provider**. For technical reasons, direct visibility of the alert for nursing could not be built.
- **The provider is responsible for sharing the chosen management/mitigation approach with the bedside RN**, since nursing will not see the alert directly.
- **Consider updating problem list with 'Patient at risk for TACO'**

Recommended mitigation strategies for at-risk patients

- **Transfuse the minimum necessary volume** — order single units and reassess before ordering additional units rather than defaulting to multiple units
- **Slow the rate of administration**, generally over 3–4 hours per unit as tolerated, for hemodynamically stable at-risk patients
- **Consider peri-transfusion loop diuretics** (e.g., furosemide) in appropriate hemodynamically stable patients; diuretics remain underutilized in at-risk patients.

- **Monitor closely** for respiratory distress, hypertension, and positive fluid balance during and for several hours after transfusion; if TACO is suspected, stop the transfusion, provide supplemental oxygen, administer diuretics, and report the reaction to the Transfusion Service

Questions

Please direct questions to the UCSF Transfusion Service